



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,966	12/08/2005	Aya Imada	03500.017755	6543
5514 7590 07/02/2008 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112				
EXAMINER				
TRAN, BINH X				
ART UNIT		PAPER NUMBER		
1792				
MAIL DATE		DELIVERY MODE		
07/02/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,966

Applicant(s)

IMADA ET AL.

Examiner

Binh X. Tran

Art Unit

1792

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chou (US 6,309,580) in view of Tamayoshi (JP 2000-315785).

Respect to claim 16, Chou discloses a process for producing a structure having holes, comprising:

providing a first member (substrate 18) having a patterning layer (20) (Fig 1A);

forming a protrusion-depression structure on the patterning layer 920) by impressing a second member (10) having a protrusions on the pattern layer (Fig 1A-1C, col. 8 lines 5-45);

etching the substrate (18) using chemical etching, retaining the patterning layer in the depression of the protrusion-depression structure, to form holes (40) on the substrate, starting from the depression side.

Chou does not explicitly disclose the first member having a patterning layer comprises of a material soluble during anodization on the layer. However, Chou clearly teaches that the first member having patterning material contains methyl methacrylate (See, col. 8 lines 65 to col. 9 lines 20, Note: methyl methacrylate aka PMMA, same with applicant's patterning layer comprises of a material soluble during anodization). Soluble during anodization is a property of a material. According to the MPEP 2112.01, II, "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present". Thus, the examiner interprets Chou implicitly teaches the first member having a patterning layer comprises of a material soluble during anodization because Chou teaches to use the same material with applicants (i.e. PMMA).

Chou also fails to disclose the step of anodizing the substrate by immersing the substrate in an anodization solution. However, Chou clearly teaches to form the hole on the substrate while retaining the patterning layer. Tamayoshi teaches to anodize the

substrate by immersing the substrate in an anodization to form holes on the substrate, wherein the hole (20) can be formed having arranged corresponding to the pattern (paragraph 0014-0048). Tamayoshi further disclose the first member comprises of a material (aluminum) that is soluble during anodization on a layer. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi by anodizing the substrate by immersing the substrate in an anodization solution, because this technique provide a cheap, easy and short time process to create holes over a large substrate area (paragraph 0017).

Respect to claim 17, Chou discloses the patterning layer (20) consists of a material (thermoplastic) that is deformed when impress with a second member (Fig 1b, read on "material having a less strength than the second member"). Respect to claim 18, Chou discloses the patterning material contains methyl methacrylate, polymethyl methacrylate (aka PMMA, col. 8 lines 65 to col. 9 lines 20; read on layer contains an alkoxide, see evidence in prior art made of record).

Respect to claim 19, Chou discloses the height or depth of the protrusions of the second member is up to 200 nm (col. 8 lines 35-39). Chou further discloses the patterning layer (20) can has a thickness about 50 nm (col. 9 lines 12-15, 200 nm > 50 nm; read on "the height of the protrusions of the second member is larger than the thickness of the patterning layer). Respect to claim 20, Chou discloses the step of filling a function material into the holes (40) (col. 10 lines 45-50).

Respect to claim 21, Chou fails to disclose method for producing a magnetic recording medium wherein the function material is a magnetic material. Tamayoshi

discloses a method for producing a magnetic device (abstract), including a magnetic recording medium (paragraph 0009, 0038) and the material is a magnetic material (paragraph 0027, 0090). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Chou in view of Tamayoshi forming a depositing a magnetic material into the holes to form magnetic recording medium, because this technique is cheap and easy (paragraph 0017).

Response to Arguments

4. The applicant's amendment filed on 3-28-2008 was sufficient to overcome the previous 35 USC 112, 2nd paragraph rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., it is not necessary to remove the remaining film existing in the depression of the patterning layer by a separate step as by etching, which feature simplifies the process of hole formation as shown in Example 7) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicants further states "Chou '580 is devoid of any disclosure of forming holes by use of a patterning material soluble in the anodization solution." The examiner disagrees. As discussed above, Chou clearly teaches to form holes using a patterning material contains methyl methacrylate (aka PMMA, same with applicant's patterning layer comprises of a material soluble during anodization See, col. 8 lines 65 to col. 9

lines 20). Soluble during anodization is a property of a material. According to the MPEP 2112.01, II, "Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present".

The applicants further states "In col. 10, Chou teaches use of reactive ion etching or chemical etching to form recesses in the substrate. The present invention avoids a separate etching step to form holes." This argument is not commensurate with the scope of the claims. There is no limitation in claim 16 which excludes the separate step of etching.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The applicants further state "Tamayoshi fails to disclose using a patterning layer comprised of a soluble material to reduce the steps in forming holes." The examiner disagrees. First, Tamayoshi teaches to use first member comprises of a material that is soluble during anodization on a layer to form hole on the substrate. Second, there is no limitation in the claim which indicates reducing the steps in forming holes as stated by applicants.

The applicants further state "Even when combined, the concept of using a patterning layer of a soluble material to reduce the steps would be unappreciated". The examiner disagrees. This examiner still maintains that it is obvious to combine Chou in view of Tamayoshi by anodizing the substrate by immersing the substrate in an anodization solution, because this technique provide a cheap, easy and short time process to create holes over a large substrate area (paragraph 0017).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571)272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

Art Unit: 1792

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Binh X Tran
Primary Examiner
Art Unit 1792

/Binh X Tran/
Primary Examiner, Art Unit 1792